

## Science Undergraduate Laboratory Internships (SULI)

Summer 2022 - Application for: Christopher John Freitas

### APPLICANT PROFILE

#### General Applicant Information

**First Name:** Christopher

**Middle Name:** John

**Last Name:** Freitas

**Previous Last Name(s):**

**Primary Email Address:** cjfreita@hawaii.edu

**Alternate Email Address 1:** chrisf96819@gmail.com

**Alternate Email Address 2:**

**ORCID:** [0000-0001-9351-987X](https://orcid.org/0000-0001-9351-987X)

#### Current Address

**Primary Phone Number:** 808-224-7955

**Alternate Phone Number:**

#### Citizenship/Languages/Eligibility Information

**I will be 18 years of age or older by the time the internship begins:** Yes

**Are you a U.S. Citizen?** Yes

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### EDUCATIONAL BACKGROUND

#### Academic Information

Are you currently attending a community college or 2-year college?

No

Current academic status:

Senior

If you are selected as a participant in this DOE program, will you receive academic credit from your university/college for participating?

No

#### Undergraduate Institution Information

College/University Country: United States and U.S. Territories

College/University State/Province/Territory:

Hawaii

College/University Name: University of Hawaii at Manoa

College/University Address: 2500 Campus Rd, Honolulu, HI 96822

College/University City: Honolulu

College/University Zip Code: 96822-2399

Expected/Declared Major: Engineering - Mechanical

Expected Degree From This College/University:

Bachelor's

Expected/Completed Graduation Date:

May / 2022

Transcript: EngineeringTranscripts.pdf

Does this institution provide grades?

No

#### Science, Technology, Engineering and Mathematics (STEM) Courses

Course Title: Mechanics of Materials

Course Number: CEE370

Enrollment Status: Currently Enrolled

#### High School Graduation or GED

Date of High School Graduation or GED:

May / 2016

Country: United States

City: Honolulu

State/Province/Territory: HI

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### WORK EXPERIENCE & SKILLS

#### Work Experience

<b>Name of Place of Employment or Activity:</b>	Zara
<b>Dates of Employment or Activity:</b>	From 3/31/2020 To Present
<b>Hours Per Week:</b>	20.0
<b>Primary Duties:</b>	Stock team
<b>Tasks Performed:</b>	receive and process shipment, pull replenishment, deal with customers, cash register, store opening and closing, manage damaged products and organizing stockroom capacity.

<b>Name of Place of Employment or Activity:</b>	Pacific Jobbers Warehouse
<b>Dates of Employment or Activity:</b>	From 3/20/2019 To 9/19/2019
<b>Hours Per Week:</b>	40.0
<b>Primary Duties:</b>	Warehouse team
<b>Tasks Performed:</b>	pull product from invoices, receive shipment, organizing warehouse stock and capacity, lead other warehouse team

#### Professional Associations

<b>Are you a member of any professional organizations?</b>	No
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#### Computer Skills

<b>Computer related skills:</b>	Photoshop, Microsoft Office, Google Sketchup, basic programming (Python), Clip Studio
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#### Laboratory/Technical Skills

<b>Experience with advanced laboratory techniques or equipment:</b>	Physics I and II Labs (work with oscilloscopes, lasers, and circuits), Chemistry I and II (titrations and reactions), basic workshop skills (woodwork) and robotics team (middle school)
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## Science Undergraduate Laboratory Internships (SULI)

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### PROGRAM INFORMATION

#### Eligibility

Have you previously participated in 2  
SULI appointments? No

#### Previous DOE Internship/Fellowship or Lab Activity Experience

Have you ever had an  
internship/fellowship with the  
Department of Energy or any of its  
National Laboratories (such as SULI,  
CCI, VFP) or attended an activity at  
one of the National Laboratories  
(such as a Mini-Semester or  
Sustainable Research Pathways)? No

#### Availability

What is the earliest date you can  
begin your internship? 5/5/2022

When do you need to complete your  
internship? 9/28/2022

#### First Choice Host DOE Laboratory

DOE Laboratory: Thomas Jefferson National Accelerator Facility (TJNAF)

First Choice Research Area: Nuclear Physics

Second Choice Research Area: Engineering Mechanical

Third Choice Research Area: Materials Sciences

#### Second Choice Host DOE Laboratory

DOE Laboratory: Fermi National Accelerator Laboratory (FNAL)

First Choice Research Area: Quantum Engineering

Second Choice Research Area: Cosmology

Third Choice Research Area: Engineering Mechanical

#### Relatives Employed at DOE Laboratories

Are you a relative of an employee at  
the proposed host DOE laboratories? No

## Science Undergraduate Laboratory Internships (SULI)

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### ESSAYS

<b>Research Experience:</b>	No experience yet.
<b>Research Interests:</b>	string theory, particle physics, gravity and multiple dimensions, new forms of energy, planetary objects, space travel
<b>Personal Experience:</b>	<p>I have taken 3 levels of physics which has provided me with backgrounds in advanced topics including quantum physics, relativity, and radiation. I have also taken more than 4 calculus courses, giving me a strong mathematical base. In middle school I participated in robotics team and my main roles were programming and testing. In high school I worked on projects like catapults and electric motors and was also part of the math team for 2 years. I was also part of Civil Air Patrol and was learning how to pilot aircraft and studied military code and conduct. I am also an excellent artist and can also do digital art and some photography.</p> <p>I help most of my friends and classmates with their classes if it involved physics or any math and engineering.</p> <p>Working in fast fashion, I have strong leadership and communication skills and ability to focus on getting the job done.</p>
<b>Professional Goals:</b>	I hope one day I can use my knowledge to find new technology that will allow mankind to one day reach the outer ends of space while also inventing methods to make life more enjoyable for the less fortunate.

### RECOMMENDATIONS

<b>Recommendation 1:</b>	<b>First Name:</b> Guillian <b>Last Name:</b> Eugene <b>Email:</b> eguillian@hpu.edu <b>Status:</b> Received 10/28/2021
<b>Recommendation 2:</b>	<b>First Name:</b> Matt <b>Last Name:</b> Takane <b>Email:</b> mathtakane@gmail.com <b>Status:</b> Received 10/31/2021

# University of Hawai'i System - Campus Report

**Institution:** Manoa

Tuesday, 26 October 2021, 11:30:16 AM

**Banner ID:** 2413-8097

**Name:** Christopher J. Freitas

**Program:** Manoa Undergraduate  
Engineering BS/ME

## Description of Leave of Absence

LOA Description	From Date	To Date
Leave of Absence	2021-01-11 00:00:00	2021-05-14 00:00:00

## Campus Report by Department for Manoa

### Summary of Transfer Work Totals into Manoa

Transfer Institution	Inst Type	Transferable Credits
Advanced Placement Exam (CB)		4.00
Ritsumeikan Asia Pacific Univ		52.00
<b>Total Transfer Credits</b>		<b>56.00</b>

No	Title	Level	Credits	Grade	Notes	Term	Instructor	Comments
<b>CEE</b>								
270	Applied Mechanics I	UG	3.00	CR		Spring 2020	Han Xiaole	
271	Applied Mechanics II	UG	3.00	A-		Summer 2020	Russ Richard	
370	Mechanics of Solids	UG	3.00	***		Fall 2021	Moon Do Soo	Grade Mode: Letter Plus + Minus

**Undergraduate: Passed Hours:** 6.00 **GPA Hours:** 3.00 **GPA points:** 11.10 **Cumulative GPA:** 3.70

<b>CHEM</b>								
161	General Chemistry I	UG	3.00	B-		Fall 2019	Fuller Amy	
161L	General Chemistry Lab I	UG	1.00	B+		Fall 2019	Fuller Amy	
162	General Chemistry II	UG	3.00	B		Spring 2020	Brayton Daniel	

**Undergraduate: Passed Hours:** 7.00 **GPA Hours:** 7.00 **GPA points:** 20.40 **Cumulative GPA:** 2.91

<b>EE</b>								
211	Basic Circuit Analysis I	UG	4.00	C-		Fall 2020	Ohta Aaron	

**Undergraduate: Passed Hours:** 4.00 **GPA Hours:** 4.00 **GPA points:** 6.80 **Cumulative GPA:** 1.70

<b>MATH</b>								
242	Calculus II	UG	4.00	B		Fall 2019	Harron Piper	
243	Calculus III	UG	3.00	B+		Spring 2020	Harron Piper	
244	Calculus IV	UG	3.00	C		Summer 2020	Corea Kenneth	
302	Intro to Differential Eqns I	UG	3.00	C		Fall 2020	Mileyko Yuriy	

**Undergraduate: Passed Hours:** 13.00 **GPA Hours:** 13.00 **GPA points:** 33.90 **Cumulative GPA:** 2.60

<b>ME</b>								
311	Thermodynamics	UG	4.00	D		Fall 2020	Lee Woochul	
311	Thermodynamics	UG	4.00	***		Fall 2021	Kobayashi Marcelo	Grade Mode: Letter Plus + Minus
331	Materials Science and Engr	UG	0.00	F		Fall 2020	Brown Joseph	
331	Materials Science and Engr	UG	3.00	***		Fall 2021	Brown Joseph	Grade Mode: Letter Plus + Minus

Undergraduate: Passed Hours: 4.00GPA Hours: 7.00GPA points: 4.00Cumulative GPA: 0.57									
PHYS									
	170	General Physics I	UG	4.00	B-		Fall 2019	Petty Sara	
	170L	General Physics I Laboratory	UG	1.00	B+		Fall 2019	Padasdao Blayton	
	272	General Physics II	UG	3.00	A-		Spring 2020	Rubin David	
	272L	General Physics II Laboratory	UG	1.00	A-		Spring 2020	Christy Jacob	
	274	General Physics III	UG	3.00	***		Fall 2021	Nishimura Kurtis	Grade Mode: Letter Plus + Minus
Undergraduate: Passed Hours: 9.00GPA Hours: 9.00GPA points: 28.90Cumulative GPA: 3.21									
.: End of Record for Manoa   Christopher J. Freitas .:									

† Indicates that a grade has been entered into the Student Information System, however this is unofficial until the grade is rolled to academic history.  
>> **Click here** to see code descriptions for UH Repeat Status

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# SULI PROGRAM APPLICATION RECOMMENDATION FOR CHRISTOPHER JOHN FREITAS

## Recommender Contact Information

- **First Name:** Eugene
- **Last Name:** Guillian
- **Title:** Assistant Professor of Education
- **Department:** School of Education
- **Institution/Organization:** Hawaii Pacific University School of Education
- **Telephone:** 808-356-5229
- **Email:** eguillian@hpu.edu

## Applicant Information

### Association

Describe your relationship to the applicant, including how long you've known the applicant, where, and in what capacity.

I have known Mr. Freitas since his freshman year in Maryknoll School, where I used to teach physics at various levels, from freshman physics using the Physics First curriculum through AP Physics for qualified upperclassmen. I had Mr. Freitas in my class as a freshman, as well as in my AP Physics course in his junior year in high school. In addition to being a student of mine, Mr. Freitas was a regular in my classroom during unscheduled times and after school because of our shared interest in, and knowledge of, Japanese and Japanese culture. He and several of his friends came to engage in conversations about topics ranging from culture and arts, language through physics and cosmology. Mr. Freitas also came in to engage in personal physics projects in which he built contraptions that demonstrated principals of physics. For example, during after school hours, he built trebuchet models of increasing sophistication over several weeks. At the end of this period, he was able to create a model that launched a tennis ball over a distance of 30 feet with good enough accuracy that one could play catch with it. Mr. Freitas enjoyed not only talking about physics but applying physics ideas and making it work in real life. I encouraged his interest as much as possible, and gave him opportunities to explore his interest during unscheduled times and after school hours.

### Applicant Comments

Please provide substantive comments about the applicant's education, training, aptitude, or promise relevant to the SULI program. Include any relevant additional detail or perspective regarding the applicant's research experience or equivalent experience on complex projects, including the level of independence or other factors that would contribute to the applicant's ability to make an excellent contribution to the SULI program.

I was Mr. Freitas' high school physics teacher, and I got to know him very well during the four years of high school. Mr. Freitas was one of the most remarkable and talented students I have ever encountered in my 10 years as a high school teacher. He was not only interested in physics, he showed strong interest in connecting his knowledge about physics with real-world applications. When he was a freshman in high school, he single-handedly planned and constructed trebuchet models of increasing sophistication, range, and accuracy. I was involved in his project only to supervise for safety and to engage him in discussions about how he is applying physics to refine the design. He had a remarkable ability to take new concepts and use them to improve the precision of his explanations of why he was making changes to his models.

After his freshman year, Mr. Freitas' interests widened into the world of arts, culture, and foreign language. He is a remarkable and talented artist who engaged in the visual arts and graphic design in addition to music. He performed in ensembles with his close friends and played for school events. He was methodical in his artistic projects, including his manga novel, which required sophisticated preparation and planning for both the story and graphical representations of character's emotions and actions.



Because of Mr. Freitas' wide interests, he did not spend as much time on physics as he did in his freshman year, but he still took AP Physics and performed well in my class. He learned mathematics easily and quickly, and was able to apply it to physics problems using essential physics concepts.

After high school, Mr. Freitas explored Japanese culture by going to the Asia Pacific University in Japan. He decided that he also wanted to challenge himself in physics again and decided to return to Hawaii to pursue his studies in science and engineering.

Mr. Freitas' path in physics is probably unconventional. However, his path demonstrates his high level of independence. He is not bound by convention and follows his own path in life. He has the ability to imagine a final product and plan carefully and execute the plan until he creates a final product that is of high quality. He has done this not only in the area of physics and engineering, but also in the arts. I believe that his talents in diverse areas, his character as a highly independent person with strong work ethic, and his voracious appetite for knowledge and experience are characteristics that make him a promising candidate for the SULI program.

## Applicant Rating

In comparison to other undergraduate students, please rate the applicant relative to his/her peers on the following qualifications:

	Do Not Know	Below Average	Average	Above Average	Superior
<b>Analytical and Mathematical</b>					X
<b>Experimental Research</b>				X	
<b>Overall Academic</b>					X
<b>Initiative and Self Reliance</b>					X
<b>Motivation toward Scientific Career</b>				X	
<b>Originality of Thought</b>					X
<b>Emotional Maturity</b>				X	
<b>Ability to Work with Others</b>				X	
<b>Potential for Leadership</b>					X
<b>Oral Communication Skills</b>					X
<b>Written Communication Skills</b>					X

# SULI PROGRAM APPLICATION RECOMMENDATION FOR CHRISTOPHER JOHN FREITAS

## Recommender Contact Information

- **First Name:** Matt
- **Last Name:** Takane
- **Title:** NA
- **Department:** NA
- **Institution/Organization:** Civil Engineer/Bowers + Kubota
- **Telephone:**
- **Email:** matttakane@gmail.com

## Applicant Information

### Association

Describe your relationship to the applicant, including how long you've known the applicant, where, and in what capacity.

Christopher Freitas was my classmate that I met back in middle school. When I initially started at Maryknoll in sixth grade, I had trouble making friends, however, Chris and I had the same classes where he was quick to strike up a conversation with me, eventually becoming one of my first friends at Maryknoll School. We subsequently stayed friends throughout high school joining the tennis and cross-country team together. After high school, we parted ways as he went to Japan for college while I attended UH Manoa, however, we still kept in touch and also played tennis when he returned to Oahu when on break.

### Applicant Comments

Please provide substantive comments about the applicant's education, training, aptitude, or promise relevant to the SULI program. Include any relevant additional detail or perspective regarding the applicant's research experience or equivalent experience on complex projects, including the level of independence or other factors that would contribute to the applicant's ability to make an excellent contribution to the SULI program.

Chris immersed himself in many different activities in high school, from joining the cross-country and tennis team to becoming the student body president for our grade in our sophomore year, and also joining various clubs like civil air patrol.

During his first season of cross-country, Chris initially joined with no conditioning, and in his first race, he finished in last place. However, Chris did not give up and instead attended each practice to improve his performance. As the season progressed, he was able to drastically improve his 3-mile time by reducing it by almost 50% from his first race time.

Similarly, Chris also joined the tennis team in high school with no experience. Like most sports, tennis has many different aspects to learn which include but is not limited to hitting forehand/backhand groundstrokes, forehand/backhand volleys, and serves. Despite the steep learning curve, Chris was able to quickly learn the proper technique for each stroke as well as common tennis tactics used in both singles and doubles. He was able to apply this in tennis matches during the season securing multiple wins against his opponents where he outlasted them through consistency and identified and targeted his opponent's weaker stroke.

## Applicant Rating

In comparison to other undergraduate students, please rate the applicant relative to his/her peers on the following qualifications:

	Do Not Know	Below Average	Average	Above Average	Superior
Analytical and Mathematical					X
Experimental Research				X	
Overall Academic				X	
Initiative and Self Reliance				X	
Motivation toward Scientific Career					X
Originality of Thought				X	
Emotional Maturity				X	
Ability to Work with Others					X
Potential for Leadership					X
Oral Communication Skills					X
Written Communication Skills				X	